Mobility21
DoT National University Transportation Center [2017-2022]

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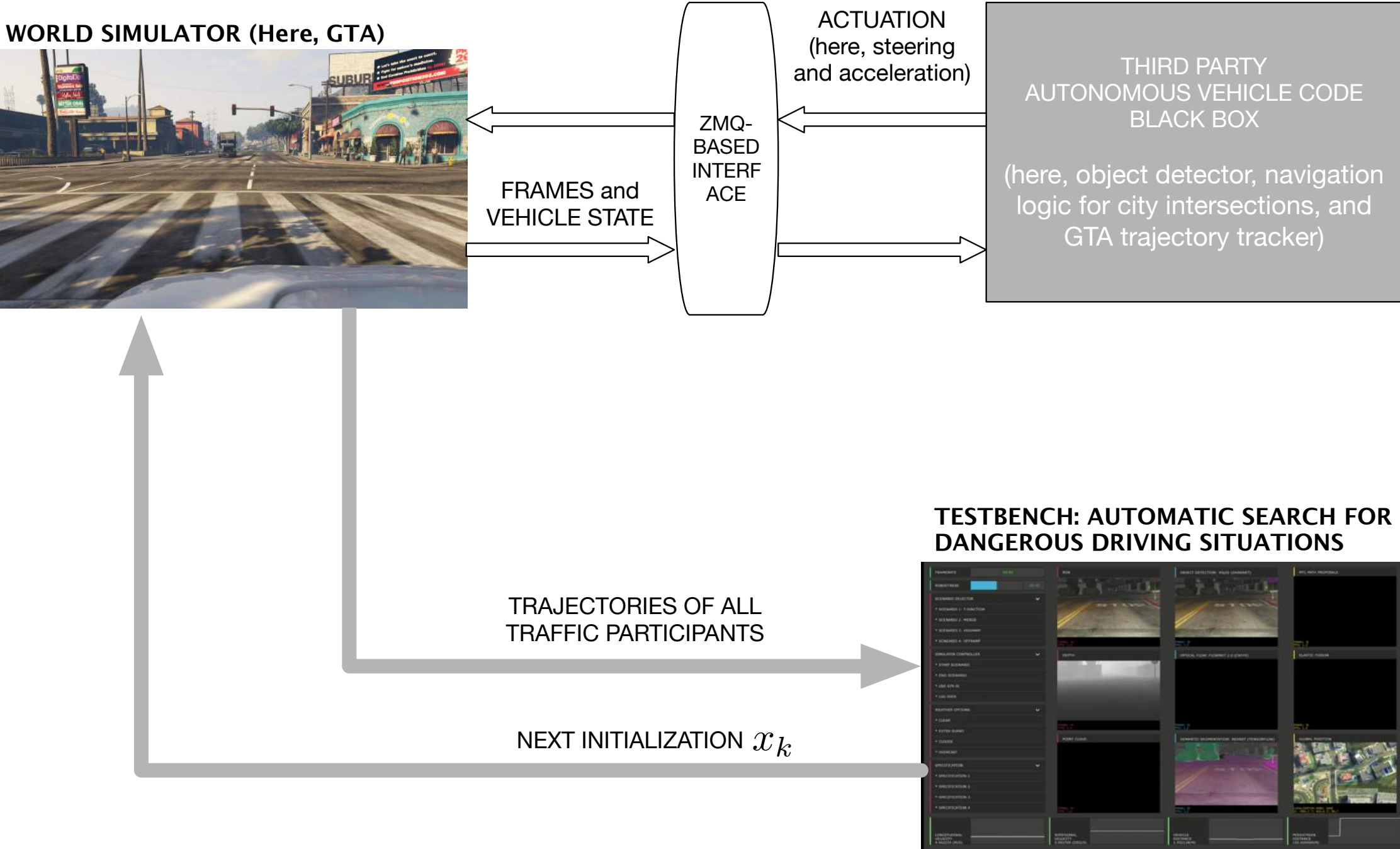
A Driver's License Test for Driverless Vehicles

Safe AV: Key Challenges

1. Defining Safe Autonomous Systems

2. The Insurance Problem

3. The Guardian Angel Problem

4. Connected Autonomous Vehicles

AVCAD Toolchain – We build AV Testing Tools to evaluate the safety in Synthetic Worlds

TEST HARNESS: SIMULATOR, AV CODE and TESTBENCH
(Section II)

WORLD SIMULATOR (Here, GTA)

ZMQ-BASED INTERFACE

ACTUATION
(here, steering and acceleration)

FRAMES and VEHICLE STATE

THIRD PARTY AUTONOMOUS VEHICLE CODE BLACK BOX

(here, object detector, navigation logic for city intersections, and GTA trajectory tracker)

TESTBENCH: AUTOMATIC SEARCH FOR DANGEROUS DRIVING SITUATIONS

TRAJECTORIES OF ALL TRAFFIC PARTICIPANTS

NEXT INITIALIZATION x_k

AVCAD: **Robust Testing** Interface